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# WATER SUPPLY OUTLOOK FOR MONTANA

Prepared by

#### U. S. DEPARTMENT of AGRICULTURE \* SOIL CONSERVATION SERVICE

Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.



#### TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO NUMBER ORC 221-3

#### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

#### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia

# WATER SUPPLY OUTLOOK FOR MONTANA

and FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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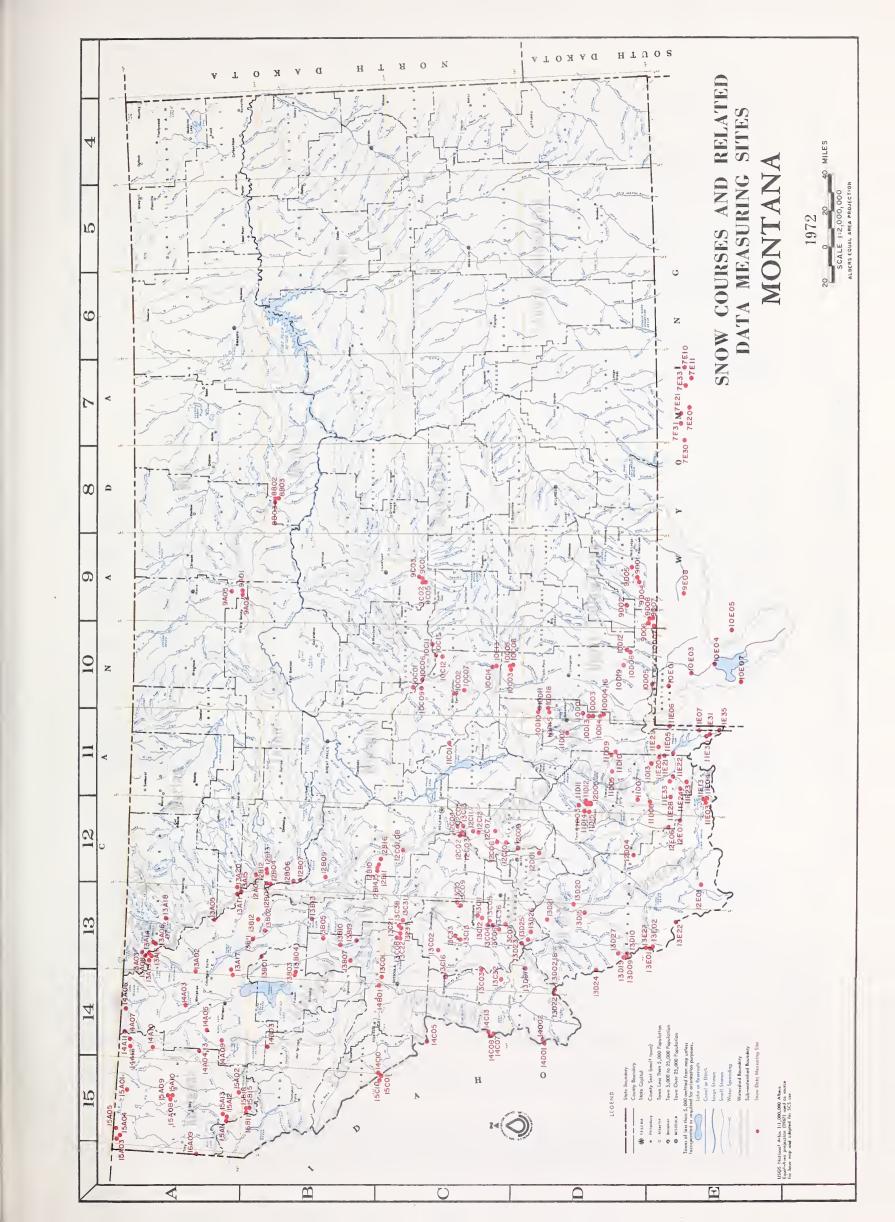
SOIL CONSERVATION SERVICE P.O. Box 98 Bozeman, Montana 59715



#### TABLE OF CONTENTS

MAP, SNOW COURSES AND RELATED DATA MEASURING SITES	Page
MONTANA WATER SUPPLY OUTLOOK	1-2
SUMMARY OF SNOW MEASUREMENTS	3
RESERVOIR STORAGE	4
SOIL MOISTURE	5
SNOW SURVEY DATA	6-10
COOPERATORS Inside Back	Cover





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#### MONTANA WATER SUPPLY OUTLOOK February 1972

#### COLUMBIA RIVER DRAINAGE

Snow - Many snow courses in the Flathead and Clark Fork drainages have water equivalents greater than the previous February 1 maximums. In the Kootenai and Bitterroot River headwaters, water equivalent is near previous maximums, and a little less than a year ago, which is about 140 to 145 percent average. Snowpack in the Flathead and upper and lower Clark Fork drainages is above last year and 160 to 170 percent average. Nearly all snow courses have water equivalents larger than the April 1 average.

Moisture in the soil underneath the snowpack is generally near to a little below average in the Kootenai and Flathead drainages. Mountain soils are drier than usual in the Clark Fork and Bitterroot areas.

Streamflow - Forecasts will be published on March 1. However, it is expected the April through September streamflow will be about 125 percent average in the Kootenai, Bitterroot and Flathead River drainages. The upper Clark Fork should produce 130 to 135 percent average flows. The Clark Fork River below the Flathead River should have streamflow approximately 130 percent average.



#### MISSOURI RIVER DRAINAGE

<u>Snow</u> - Some snow courses in the tributary drainages to the Missouri Main Stem are near or above previous maximums. In headwaters of the Missouri, snowpack is generally a little less than record amounts measured last season. Snowpack is 140 to 160 percent average in the Missouri River headwaters, with the exception of the Gallatin drainage which is 120 percent average. Snowpack increases to about 175 percent along the main stem tributaries. Several snow courses have water equivalents greater than the April 1 average.

Soils underneath the snowpack contain more than normal amounts of moisture in the Beaverhead, Madison and upper Gallatin drainages, and generally near normal elsewhere, with the exception of lower portions of the Milk, Marias, Judith and Musselshell drainages. These areas have below normal moisture.

Streamflow - Forecasts will be released on March 1. From the present snowpack and soil moisture conditions, it is expected that April-September streamflow will be 125 to 140 percent average in the Missouri River headwaters. The Beaverhead should produce about twice its average streamflow. The Sun and Marias Rivers should have 120 to 125 percent average streamflow. Streams flowing out of the mountains of central Montana, and along the continental divide west of Helena, should produce 140 to 150 percent average runoff. Streamflow in the Missouri River below Great Falls is expected to be approximately 140 percent average.

#### YELLOWSTONE RIVER DRAINAGE

<u>Snow</u> - Many snow courses in the Montana portion of the Yellowstone River drainage have a February 1 water equivalent greater than the April 1 average. Snow courses in Yellowstone National Park are generally a little lower percentagewise. Snowpack in the Yellowstone drainage above the Big Horn River is a little less than a year ago, and about 135 percent average. The Big Horn drainage snowpack in Wyoming is slightly above last year and about 160 percent average.

Soil moisture in the southern half of the headwater area is generally above average, and is near average in the northern portion.

<u>Streamflow</u> - April through September streamflow is expected to be comparable with high volumes of last season. In general, runoff in the 135 to 140 percent range can be anticipated for the Yellowstone and its tributaries above Billings.



#### SUMMARY OF SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses	THIS YEAR'S SNOW W	ATER AS PERCENT OF:
	Averaged	Last Year	Average
COLUMBIA RIVER DRAINAGE			
Kootenai	8	134	144
Flathead	11	120	164
Upper Clark Fork	15	147	173
Lower Clark Fork	4	110	160
Bitterroot	3	95	141
MISSOURI RIVER DRAINAGE			
Jefferson	14	104	155
Madison	8	91	140
Gallatin	10	83	121
Missouri Main Stem	6	151	178
Judith-Musselshell	2	153	177
Marias-Teton-Sun	1	105	163
YELLOWSTONE RIVER DRAINAGE			
Yellowstone	12	94	136
Little Big Horn	7	113	136



#### RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

	THOUSAIN MOTO TOOCY END OF FILE		1	Usable Storage	
Basin or Stream	RESERVOIR	Usable Capacity	This Year	Last Year	Average
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COLUMBIA RIVER BAS	SIN				
Flathead	Hungry Horse	3,428.0	1,870.0	1,980.0	2,474.0
	Flathead Lake	1,791.0	1,099.0	1,150.0	1,186.0
	Camas (4)	45.2	26.4	18.3	26.6
	Mission Valley (8)	100.3	22.1	35.2	31.0
Clark Fork	Georgetown Lake	31.0	28.9	27.8	25.1
	Noxon Rapids	334.6	308.4	332.1	320.2
Bitterroot	Como	34.9		10.1	9.3
	Painted Rocks	31.7	18.7	22.3	21.7
	Nevada Creek	12.6		5.3	4.4
MISSOURI RIVER BAS	SIN				
Beaverhead	Clark Canyon	328.9	140.6	139.5	126.5
	Lima	84.0	-	41.9	22.8
Ruby	Ruby	38.8	27.2	27.2	21.1
Madison	Hebgen Lake	377.5	259.3	266.5	168.7
	Ennis Lake	41.0	35.0	36.1	38.4
Gallatin	Middle Creek	8.0	3.4	4.0	3.3
Missouri	Canyon Ferry	2,043.0	1,662.0	1,613.0	1,602.0
	Hauser & Helena	61.9	62.5	63.6	56.5
	Lake Helena	10.4	10.7	11.1	8.6
	Holter Lake	81.9	57.7	79.6	61.5
	Smith River	10.7	2.1	5.7	5.7
	Bair	7.0	2.7	4.7	4.0
	Martinsdale	23.1	-	9.5	6.3
	Deadman's Basin	72.2	43.7	50.8	42.2
	Fort Peck	19,410.0	16,410.0	16,280.0	10,930.0
Sun	Gibson	105.0	39.0	24.8	47.0
	Willow Creek	32.3	20.1	21.6	20.4
	Pishkun	32.0	17.6	17.4	17.9
Marias	Lower Two Medicine	16.6	-	case	0.0
	Four Horns	19.2	_	-	12.1
	Swift	30.0	14.9	15.0	17.8
	Lake Frances	112.0	68.0	85.8	83.3
	Tiber	1,347.0	488.7	460.4	625.5
Milk	Fresno	127.2	40.8	61.8	59.6
	Nelson	66.8		49.4	42.4
	Lake Sherburne	66.1	15.4	18.6	17.9
Yellowstone	Mystic Lake	20.8	10.2	8.8	10.4
	Tongue River	68.0	34.6	35.8	19.9
	Cooney	27.5		13.3	13.0
Big Horn	Big Horn Lake	1,356.0	873.9	916.9	723.0



DRAINAGE BASIN and/or STATION		Prof	ile (Inches)	Date of	Soil Moisture (Inches)			
Name	Elevation	Depth	Capacity	Survey	This Year	Last Year	Average +	
			- 4					
	COLUMBIA	RIVER	BASIN					
Kootenai								
Baree Trail	3800	48	7.5			6.6		
Murphy Lake R. S.	3000	48	22.6	2/03	19.2		19.5	
Raven R. S.	3050	48	23.0	2/03		20	œ	
				·				
Flathead								
Desert Mountain	5600	54	8.4	1/28				
Marias Pass	5250	54	6.5	1/29	4.7	4.8	5.1	
Olember Tree 1								
Clark Fork Black Pine	7100	48	10.0	1/28	7.5	7 6	7.4	
Lubrecht Forest	4100	48	26.8				/ • <del>=</del>	
Seeley Lake R. S.	4030	40 48	11.9	2/03	7.0	11.6	7.4	
Skalkaho Summit	7260	48	10.8	2/01	/ . U	11.0	/ • <del>+</del>	
Skalkano Summit	7200	+0	10.0			_		
Bitterroot								
Gibbons Pass	7100	48	7.1	2/01	2.9	6.0	5.3	
Lolo Pass	5250	48	10.6	1/27	3.5	6.1	6.3	
	MISSOURI	RIVER	BASIN					
Beaverhead								
Lakeview	6700	48	15.3	2/01	13.3	6.4	6.8	
16.KeV 16W	3,33	, 0	23 03	2,02	1000	00,		
Madison								
West Yellowstone	6700	48	6.5	1/27	2.8	2.9	2.7	
Gallatin	2050	1.0	17 0	0 / 01	10 6	16 %	16 1	
Bridger Bowl	7250	48	17.0	2/01	15.6	16.4	16.1	
College Site #2 Lick Creek	4860 6860	43 48	17.7 18.8	1/28 1/27	13.5 16.8	15.6 17.0	12.4 17.3	
Twenty-One Mile	, 7150	40 48	10.0	1/27	5.6		4.2	
Iwency-one rille	. /150	40	10.0	1/2/	0.0	٠,٠	7.4	
Missouri Main Stem								
Kings Hill	7420	48	11.8	1/28	4.5	5.0	6.8	
Stemple Pass	6350	48	5.9	2/01	3.6	4.0	4.0	
Milk Control	0.050	2.0	20.0	1/20	6 5	6 =		
Beaver Creek	3950	48	20.9	1/28	6.7		uso	
Rocky Boy	3950	36	10.1	1/28	5.8	7.2	<b></b>	
Yellowstone								
Battle Ridge	6020	48	17.6	2/01	11.2	15.9	13.2	
Northeast Entrance	7350	48	9.4	1/29	3.7	5.0	6.3	

<sup>-5-</sup>

<sup>+</sup> Average for period of record.



6	M	n	NAF
3	N	u	W

SNOW		THIS YEAR		PAST R	ECORD	
DRAINAGE BASIN and/or SNOW COURSE	Date	Snow Depth	Water Content	Water Conte	ent (inches)	
NAME	Elevation	of Survey	(Inches)	(Inches)	Last Year	Average

#### COLUMBIA RIVER BASIN

KOOTENAI RIVER						
Banfield Mountain	5600	2/02	79	27.9	21.7	
Banfield Mountain Pillow	5600	2/02	SP	21.2	20.2	GEO
Bristow Creek	3900	2/02	48	14.7	12.4	œ
Cedar Grove	4100	2/03	51	15.9	12.0	€
Davis Creek	5400	2/01	77	25.0	23.4	ones.
Fernie	3500	1/31	47	12.0	7.3	7.1
Field	4200	1/31	31	6.9	3.9	5.5
Garver Creek	4250	2/01	45	12.8	11.1	310
Garver Creek Pillow	4250	2/01	SP	11.1	10.5	-
Glacier	4100	1/31	88	27.1	23.0	20.5
Gray Creek	5100	1/28	64	20.1	11.2	12.4
Hawkins Lake	6450	2/01	87	29.5	26.6	ew
Hawkins Lake Pillow	6450	2/01	. SP	28.0	28.7	-
Kicking Horse	5400	1/31	52	13.3	9.1	11.4
Lost Soul	4800	2/02	57	18.3	14.9	<b>4</b> 00
Marble Canyon	5000				10.5	10.6
Morrissey Ridge	6100	1/31	93	28.2	25.5	20.0
New Fernie	4100	1/31	66	18.4	14.0	11.1
Poorman Creek	5100	2/03	108	40.0	24.2	900
Poorman Creek Pillow	5100	2/03	SP	33.9	28.0	carb
Sinclair Pass	4500	1/30	32	8.2	4.2	4.7
Sullivan Mine	5100	1/31	52	14.2	15.0	9.7
FLATHEAD RIVER						
Desert Mountain	5600	1/28	51	17.2	15.0	10.7
Hell Roaring Divide	5770	1/30	94	33.1	27.2	22.3
Holbrook	4530				10.5A	7.4
Marias Pass	5250	1/27	75	19.8	18.9	12.1
Spotted Bear Mountain	7000				15.5A	10.1
Twin Creeks	3580				12.5A	8.7

A - Aerial observation - water content estimated.

SP - Snow pillow observation - water content only.



NOW		THIS YEAR		Y	PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date	Snow Depth	Water Content	Water Conte	nt (inches)
NAME	Elevation	of Survey	(Inches)	(Inches)	Last Year	Average
CLARK FORK RIVER						
Black Pine	7100	1/28	53	15.6	12.0	8.8
Black Pine Pillow	7100	1/28	SP	15.5	10.7	8.8
Combination	5600	1/28	30	8.2	3.8	cup
Coyote Hill	4200	2/01	43	12.6	10.1	7.8
Heart Lake Trail	4800	1/28	87	29.6	26.2	-
Hoodoo Basin	6000	1/28	156	52.2	48.3	34.
Hoodoo Basin Pillow	6000	2/01	SP	50.8	49.0	34.
Hoodoo Creek	5900	1/28	157	51.5	47.0	32.
Intergaard	6450	2/01	34	9.8	6.0	5.
Lookout	5250	1/31	121	39.3	36.1	25.
Lubrecht Flume	4800	1/29	35	9.1	3.7	060
Lubrecht Forest No. 3	5450	2/01	36	9.5	6.1	5.
Lubrecht Forest No. 4	4650	2/01	24	5.9	3.2	2.
Lubrecht Forest No. 6	4040	2/03	26	6.6	3.5	3.
Lubrecht Hydroplot	4200	1/29	· 31	8.8	5.1	580
North Fork Elk Creek	6250	2/02	48	14.4	8.9	œ
North Fork Elk Creek Pillow	6250	2/02	SP	16.4	6.1	-
Peterson Meadows	7200	1/31	42	12.4	8.8	300
Peterson Meadows Pillow	7200				8.6	300
Southern Cross	6500	2/01	26	7.9	3.5	4.
Storm Lake	7780	1/31	43	12.7	12.3	8.
Stuart Mill	6500	2/01	29	8.0	3.7	4.
TV Mountain	6800	2/03	65	21.4	19.3	11.
BITTERROOT RIVER						
Gibbons Pass	7100	,	71	21.3	22.2	15.
Lolo Pass	5230	1/25	122	33.2	26.6	-
Moose Creek	6200	2/01	55	16.6	18.2	10.
Saddle Mountain	7940	2/01	73	23.0	24.0	17.
Saddle Mountain Pillow	7940	2/01	SP	23.8	29.8	mc
Savage Pass	6600	1/28	85	26.7	23.4	wo
Twelvemile Creek	5600	1/31	77	27.0	21.0	38*
Twelvemile Creek Pillow	5600	1/31	SP	23.6	19.8	75
Twin Lakes Pillow	6400	1/31	SP	40.9	38.7	*

SP - Snow pillow observation - water content only.



	SNOW			THIS YEAR		PAST R	ECORD
DRAINAGE BASIN and/or SNOW COURSE			Date	Snow Depth	Water Content	Water Conte	ent (inches)
	NAME	Elevation	of Survey	(Inches)	(Inches)	Last Year	Average

	MISSOURI R	IVER BAS	SIN			
BEAVERHEAD RIVER						
Camp Creek Carter Creek Kilgore Lakeview Canyon Lakeview Ridge Sawtelle Mountain  JEFFERSON RIVER	6800 7400 6200 6930 7400 8715	1/28 1/30 1/31 1/31 1/31 1/28	34 22 35 44 37 91	9.3 5.4 10.5 13.0 10.8 29.4	12.9 4.0 14.2 15.3 13.4 36.0	6.3 2.8 6.2 8.3 7.7
Copper Mountain Nez Perce Creek Picnic Grounds Pipestone Pass Rocker Peak Rocker Peak Pillow Uncle Sam Gulch MADISON RIVER	7700 6500 6500 7200 8000 8000 6500	1/31 1/31 2/01 1/31 1/31 1/31 1/31	35 26 19 22 50 SP 30	9.8 7.6 6.0 6.1 15.4 12.9 8.5	8.0 3.3 2.4 3.5 14.0 13.3 7.6	7.0 - 3.1 3.4 -
Big Springs Black Canyon Black Moose Hebgen Dam Island Park Lake Creek Latham Springs Lucky Dog Norris Basin Old Road Poachers Cabin Targhee Pass Tepee Creek Tepee Creek Pillow Valley View	6500 7850 8125 6550 6315 6100 7650 6900 7500 7250 8000 7000 8000 8000 6500	1/28 1/27 1/27 1/26 1/28 1/28 1/27 1/27 2/02 1/27 1/27 1/28 1/28 1/28	67 98 113 36 54 33 94 75 44 80 90 50 51 SP 54	20.7 32.2 38.8 9.8 15.9 8.8 31.2 24.0 10.6 24.6 29.1 14.1 15.0 12.0 16.9	22.3 32.0 40.8 10.0 18.2 8.4 34.4 27.6 11.1 30.4 28.4 16.3 17.6	13.1 23.1 26.8 7.5 10.6 22.4 16.8 7.2 17.5 23.8 9.4
West Yellowstone West Yellowstone Pillow	6700 6700	1/26 1/27	44 SP	12.2 9.5	13.3 11.0	7.4 5.9

SP - Snow pillow observation - water content only.



OW		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Averag <b>e</b>
GALLATIN RIVER						
Arch Falls	7350	1/27	31	9.0	10.2	7.5
Bear Basin	8150	1/28	45	14.2	and .	<b>=</b> 0
Bridger Bowl	7250	2/01	55	19.8	27.4	16.1
Bridger Bowl Pillow	7250	2/01	SP	16.0	25.8	15.6
Devils Slide	8100	1/27	48	14.7	18.2	13.2
Hood Meadow	6600	1/27	28	7.9	9.1	6.5
Lick Creek	6860	1/27	28	6.8	7.4	6.3
Lick Creek Pillow	6860	1/27	SP	5.5	6.6	5.7
Little Park	7400	1/28	40	11.8	-	aes
Maynard Creek	6210	2/01	46	15.5	16.5	10.5
Maynard Creek Pillow	6210	2/01	SP	9.2	10.8	7.4
New World	6700	1/31	27	6.7	8.7	6.4
Shower Falls	8100	1/27	55	18.0	21.5	16.0
Shower Falls Pillow	8100	1/27	SP	15.8	18.1	14.1
Twenty=One Mile	7150	1/27	. 58	16.0	19.1	11.9
MISSOURI RIVER (Main Stem)						
Chessman Reservoir	6200	2/01	25	6.6	2.7	2.6
Deadman Creek	6450	2/02	42	13.8	8.4	7.7
Deadman Creek Pillow	6450	2/02	SP	10.7	8.9	æ
Ten Mile Lower	6600	2/01	34	8.6	4.3	4.6
Ten Mile Middle	6800	2/01	46	12.1	8.8	6.9
Ten Mile Upper	8000	2/01	50	14.1	11.7	8.8
SUN-TETON-MARIAS RIVERS						
Badger Pass	6900				36.0A	-
Blue Lake	5900				24.0A	*
JUDITH RIVER						
Spur Park	8100	2/02	70	25.1	17.0	14.3
Spur Fark Pillow	8100	2/02	SP	24.8	18.1	200

A - Aerial observation - water content estimated.

SP - Snow pillow observation - water content only.



SNOW		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth	Water Content (Inches)	Water Content (inches)	
NAME	Elevation		(inches)		Last Year	Average
MILK RIVER						
Bear Paw Ski Area	5200	1/28	21	4.2	7.2	200
King Creek Saddle	4550	2/01	21	3.9	4.5	
King Springs	4150	2/01	18	3.0	3.8	
Mission Mountain	5050	2/01	20	3.4	4.4	onc.
Rocky Boy	4700	1/28	16	2.7	5.8	
Rocky Boy Pillow	4700	1/28	SP	2.6	5.8	
3	4700	1,20	O1	2.0	3.0	
ST. MARY RIVER						
Hudson Bay Divide	5800	1/27	69	18.5	16.6	
ALBERTA - BOW RIVER BASIN						
1. Bow River	5100	1/27	39.1	9.5	7.1	-
2. Upper Pipestone	5300	1/28	. 39.5	9.3	7.1	900
6. Mirror Lake	6600	1/27	46.4	12.4	8.4	
8. Chateau Lawn	5700	1/27	45.9	10.7	8.9	
10. Mt. Eisenhower	5000	1/28	33.2	6.8	4.9	490
Bow Summit	6650	2/03	44.6	10.9	7.9	<b>38</b> 0
UPPER YELLOWSTONE RIVER						
Canyon	7750	1/31	50	13.2	14.6	10.1
Cooke Station	8150	2/03	56	19.3	-	_
East Entrance	7000	1/30	36	8.6	15.6	æ
Fisher Creek	9100	2/03	101	36.6	-	-
Fisher Creek Pillow	9100	2/03	SP	35.5	38.4	an
Grizzly Peak	8400	2/01	64	18.8	10.2	10.1
Lake Camp	7850	1/30	34	7.6	9.7	5.9
Lupine Creek	7300	1/30	40	9.7	10.8	7.1
Northeast Entrance	7400	1/29	35	8.7	7.1	6.0
Northeast Entrance Pillow	7350	1/29	SP	9.2	8.8	5.9
Sylvan Pass	7100	1/30	43	11.6	11.3	8.8
Thumb Divide	7900	2/01	66	19.6	23.3	14.6
West Rosebud	7500	1/20	42	12.6	9.3	œ
White Mill	8700	2/03	77	27.9	cm	-
Maluaxina	7650	1/20	1.6	12 /.	8 6	_

SP - Snow pillow observation - water content only.

7650

1/30

46

13.4

8.6

Wolverine



## Agencies and Organizations Cooperating in Montana Snow Surveys

#### GOVERNMENT AGENCIES

#### Canada:

Department of Energy, Mines and Resources, Alberta Water Investigations Branch, Department of Lands, Forests, and Water Resources, British Columbia

#### Federal:

Department of the Army Corps of Engineers

U.S. Department of Agriculture Forest Service Soil Conservation Service

U.S. Department of Commerce NOAA, National Weather Service

U.S. Department of the Interior
Bonneville Power Administration
Bureau of Indian Affairs
Bureau of Reclamation
Bureau of Sports Fisheries and Wildlife
Geological Survey
National Park Service

#### STATE

Montana Conservation Districts
Montana Water Resources Board
Montana State University - Agricultural Experiment
Station
North Montana Branch Station - Agricultural Experiment
Station
University of Montana - Schoól of Forestry

#### PRIVATE

Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

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